

Public Workshop to Discuss Reducing Emissions from Mobile Diesel-Fueled Cargo Handling Equipment at Ports and Intermodal Rail Yards

November 10, 2004
Sacramento, California

California Environmental Protection Agency



Air Resources Board



Overview

- ◆ Background
- ◆ Applicability
- ◆ Survey and Inventory
- ◆ Regulatory Concepts
- ◆ Next Steps



Background



Goals

- ◆ Develop statewide control measure to address emissions from mobile diesel-fueled cargo handling equipment
 - Achieve maximum emission reductions (both near term and long term) for PM and NO_x
- ◆ Consideration by the Board in fourth quarter 2005

Applicability



Why Only Ports and Intermodal Rail Yards?

- ◆ Proposed off-road in-use diesel engine regulation will address all other cargo handling equipment
- ◆ Need to address environmental justice concerns
- ◆ Majority of emissions from cargo handling equipment occurs at ports and intermodal rail facilities

Ports



Intermodal Rail Yards



Equipment Types

- ♦ yard trucks
- ♦ top handlers
- ♦ side handlers
- ♦ reach stackers
- ♦ rubber-tired gantry cranes
- ♦ forklifts
- ♦ skid steer loaders
- ♦ rubber-tired loaders
- ♦ sweepers
- ♦ dozers
- ♦ excavators
- ♦ cranes



Survey & Inventory

A close-up photograph of a blue document, possibly a survey or inventory sheet, showing a table with numerical data. The numbers are printed in white on a blue background.

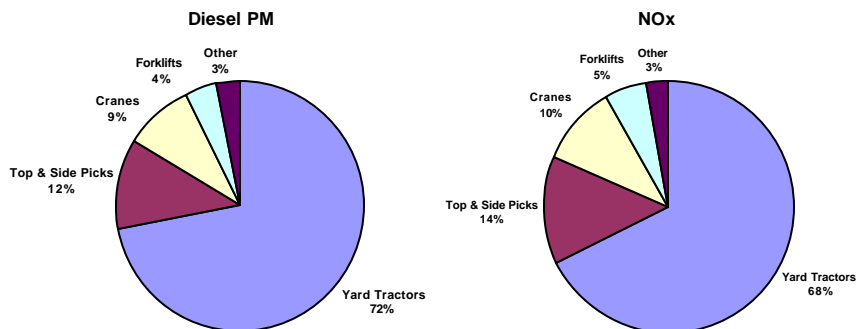
	+2.688
0	+5.000
1	+1.500
0	+1.125
0	+1.062

Emissions Inventory

- ◆ Off-road inventory updates that will include cargo handling equipment are in progress
- ◆ Surveying port and intermodal rail yard terminals will provide valuable information to enhance inventory

Distribution of Emissions for Cargo Handling Equipment Categories

Ports of Los Angeles & Long Beach



Notes:

- "Cranes" includes mobile cranes, RTG cranes, and reach stackers.
- "Other" includes rubber tired loaders, sweepers, skid steer loaders, dozers and excavators.

Cargo Handling Equipment Survey

- ♦ Purpose
 - obtain representative sampling
 - enhance off-road emissions inventory
 - aid in estimating emission reductions and cost of proposed regulatory strategies
- ♦ Participants
 - ports and intermodal rail yards
 - Ports of Los Angeles and Long Beach to provide only the information not already covered in their previous surveys
- ♦ Expected distribution in November 2004

What Does the Survey Ask?

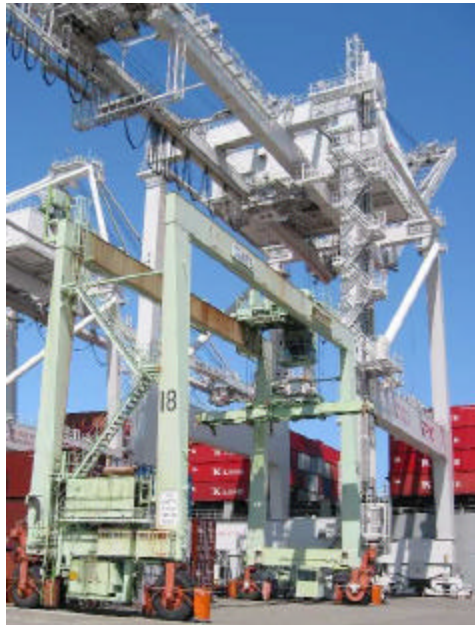
- ♦ Equipment and engine data
 - make, model, year, fuel type, horsepower, average annual hours, repower and rebuild data
- ♦ Emission Control Equipment
 - type, year installed, cost of equipment and maintenance, grants applied
- ♦ Forecasted Growth
 - expected increases in equipment and hours for 2010 and 2020

When Will Survey Results Be Available?

- ◆ Return date of January 15, 2005
- ◆ Preliminary summaries will be presented at the next public workshop (first quarter 2005)
- ◆ Data summaries will be included in staff report



Proposed Regulatory Concepts



Purpose and Applicability

- ♦ Purpose: reduce diesel PM and criteria pollutant emissions
- ♦ Applicability: any person who sells, offers for sale, leases, purchases, owns, or operates any diesel-fueled mobile cargo handling equipment at a port or intermodal rail yard in California

Exemptions

- ♦ Cargo handling equipment not located at ports or intermodal rail yards
- ♦ Cargo handling equipment that operates using alternative fuels or spark-ignited engines
- ♦ Other exemptions may be added through the regulatory process

Performance Standard Goals

- ◆ Take into account that yard trucks have the biggest contribution of emissions
- ◆ Apply appropriate BACT for equipment categories
- ◆ Achieve both near term and long term reductions
- ◆ Accelerate turnover to Tier 4 off-road standards or 2007 on-road engines, if feasible, for entire fleet

Performance Requirements - All Equipment

- ◆ Reduce unnecessary idling
- ◆ When adding equipment to the fleet after January 1, 2006, buy the cleanest available (i.e., 2004 or newer certified on-road engine, alternative fueled engine, new certified off-road engine with verified control device, etc.)

Performance Requirements - Yard Trucks (In-Use)

Model Year or Effective* Model Year	Standard	Compliance Date
Pre-1996	Install 2004 or later certified on-road engine or equivalent**	July 2007
1996-2002 With verified ECS installed by adoption date	Install 2004 or later certified on-road engine or equivalent**	July 2008
1996-2002 Without verified ECS installed	Install 2004 or later certified on-road engine or equivalent**	July 2007
2003-2005 (verified ECS is available)	Install highest level verified ECS	July 2007
2003-2005 (verified ECS is NOT available)	Install Tier 4 certified off-road engine	July 2011***
2006-2007	Install Tier 4 certified off-road engine	July 2013
2008-2010	Install Tier 4 certified off-road engine	July 2016

* "Effective Model Year" refers to the year the new engine was installed regardless of the model year of the equipment (i.e., a new 2004 on-road engine installed in 2006 into a 1997 model year vehicle would then have an effective model year of 2006 and would be required to meet the standards for that effective model year).

** We are currently evaluating the applicability of 2007 on-road engines and may revise the requirements based on the feasibility of those engines.

*** For engines under 175 horsepower, the compliance date for this group would be 2012 (to align with the effective date of Tier 4 standards for 100 to 175 horsepower engines).

Performance Requirements - All Other In-Use Equipment (Excluding Yard Trucks)

- ◆ Install best available control technology (BACT)
 - new certified on-road diesel engine if available;
 - verified Level 3 ECS
 - engine that meets certified Tier 4 off-road diesel engine standards
 - alternative fuels
 - highest level ECS verified for that equipment
 - engine that meets certified Tier 3 off-road diesel engine standards and install verified ECS if available

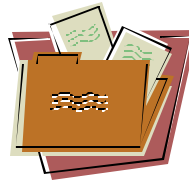
Performance Requirements - All Other In-Use Equipment (Excluding Yard Trucks)

- ♦ All equipment meet Tier 4 certified off-road diesel engine standards by specified date (to be determined)
 - currently evaluating cost and average useful life and may consider equipment-specific timelines to meet this requirement
- ♦ Example BACT compliance schedule

Group	Engine Model Years	Compliance Deadline
1	pre-1987	January 1, 2007
2	1988-1995	January 1, 2008
3	1996-2005	January 1, 2010

Reporting Requirements

- ♦ Submit initial compliance plan describing how regulation compliance will be achieved and submit yearly updates thereafter



Next Steps



- ◆ Survey distribution
November 2004 and
return January 2005
- ◆ Stakeholder meetings
- ◆ Workgroup meetings
- ◆ Next public workshop
first quarter 2005

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